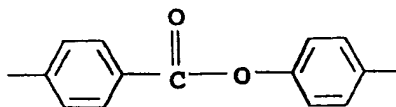


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- c) at least one cholesteric, crosslinkable oligomer or polymer selected from the group comprising cholesteric cellulose derivatives, propargyl-terminated cholesteric polyesters or polycarbonates, crosslinkable oligo- or polyorgano-siloxanes; or
- d) crosslinkable cholesteric copolyisocyanates in a polymerizable diluent; or
- e) chiral nematic polyesters having flexible chains whose cholesteric phase can be frozen in by rapid cooling to below the glass transition temperature.



- wherein said mixtures b) do not comprise mixtures of an achiral, nematic, polymerizable monomer having a mesogenic group comprising
- and a chiral cholesterylcarbonate and a crosslinking agent.
- While the preferred gain medium of the invention comprises either one of mixtures a) to e), a suitable gain medium may also comprise mixtures of mixtures a) to e).
- The production of cholesteric layers for gain media according to the invention offer a range of surprising advantages: The cholesteric helices, particularly of mixtures a) and b), can be oriented with particular advantage when dilute cholesteric solutions are used. Post-orientation of the cast (as yet unpolymerized and uncrosslinked) layer in order to align the cholesterics is often unnecessary. The cholesteric layers produced possess an extremely homogeneous layer thickness and can be produced in a reproducible manner. The invention makes cost-effective production of solid CLC laser gain media possible.
- The cholesteric mixture is preferably applied with a diluent fraction of from about 5 to 95 % by weight, in particular from about 30 to 80 % by weight, preferably from about 40 to 70 % by weight and, with particular preference, from about 55 to 60 % by weight, based in each case on the overall weight of the mixture that is to be applied.